



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/531,473

08/03/2005

Christian Simon

05056

6213

23338 7590 10/02/2008
DENNISON, SCHULTZ & MACDONALD
1727 KING STREET
SUITE 105
ALEXANDRIA, VA 22314

EXAMINER

FEELY, MICHAEL J

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

10/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,473	Applicant(s) SIMON ET AL.	
	Examiner Michael J. Feely	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20061219</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1796

DETAILED ACTION

Pending Claims

Claims 1-20 are pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

2. Applicant's election of: $-NR_1R_2$ (*species of X*), 1 (*species of n*), hydrogen (*species of R₁*), and hydrogen (*species of R₂*) in the reply filed on August 19, 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
3. Claims 8-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was *effectively* made **without** traverse in the reply filed on August 19, 2008.

It should be noted that each species of X yields a patentably distinct sol. Furthermore, variables n, Y, R₁, and R₂ yield multiple and even hundreds of variations (*particularly when X is NR₁R₂*) of each patentably distinct sol. Applicant's discussion suggests that all of these embodiments are obvious variations of each other. In light of this, Applicant is encouraged to clarify the record regarding the obvious nature of these sol materials.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kron et al. (US 2002/0018900).

Regarding claims 1-7 and 15-19, Kron et al. disclose: **(1)** a hardener for curing of epoxy resins (paragraphs 0010-0012, 0027) which produces materials with high abrasion resistance, photostability and chemical resistance (paragraph 0038), characterized in that the hardener comprises a sol prepared by controlled hydrolysis and condensation of compounds of the type:



where $n = 1$ (paragraphs 0019, 0042-0053, 0055, 0082, 0085-0086), $X = NR_1R_2$, both R_1 , R_2 being hydrogen (paragraphs 0019, 0042-0053, 0055, 0082, 0085-0086), and Y is chosen from hydrolysable groups such as alkoxy, carboxyl, and halogen (paragraphs 0019, 0042-0053, 0055, 0082, 0085-0086);

(2) characterized in that the hardener also comprises at least one UV-absorber (paragraph 0037: *see UV-stabilizer*);

(3) characterized in that the hardener also comprises at least one free radical scavenger (paragraph 0037: *see oxidation inhibitor*);

(4) characterized in that the hardener also comprises at least one antioxidant (paragraph 0037: *see oxidation inhibitor*);

Art Unit: 1796

(5) characterized in that the hardener also comprises at least one dye and/or pigment (paragraphs 0037, 0039: *see colouring agents and dyes*);

(6) characterized in that the hardener also comprises at least one filler (paragraph 0037: *see filler*);

(7) characterized in that the hardener also comprises at least one additive (paragraphs 0037, 0039);

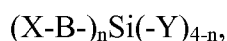
(15) characterized in that more or less free amino groups at the surface of the particle-forming condensation product in the sol has been entirely or partly converted with reactive compounds such as *epoxides*, acid derivatives, blocked and non-blocked isocyanates and compounds of the type R-X where X is a suitable atom or atom group that may be replaced and R is an organic residue or a fraction of such residue (paragraphs 0027, 0055, 0082, 0085-0086); (16) characterized in that X is chosen among halogen, substituted or non-substituted alkoxyl, phenoxyl, amine, carboxylate, sulphonate, sulphinate, phosphonate and phosphinate (*not required: scope open to any/full list of reactive compounds in claim 15*); (17) characterized in that R is chosen among non-substituted saturated and unsaturated C₁-C₂₄ alkyl, substituted saturated or unsaturated C₁-C₂₄ alkyl, substituted or non-substituted aryl, aliphatic or aromatic carbonyl, wherein the carbon chains of said compounds may optionally include one or more of the elements nitrogen, sulphur, silicon and boron and groups chosen among condensation products of one or more type of chemical compounds such as acids, alcohols, phenols, amines, aldehydes and epoxides (*not required: scope open to any/full list of reactive compounds in claim 15*);

Art Unit: 1796

(18) a cured epoxy material (paragraphs 0027, 0055, 0082, 0085-0086), characterized in that it is manufactured from an epoxy resin (paragraphs 0027, 0055, 0082, 0085-0086) and a hardener as defined by claim 1 (paragraphs 0019, 0042-0053, 0055, 0082, 0085-0086);

(19) a method for curing epoxy resins, characterized in:

i) producing a stable sol by controlled hydrolysis and condensation of silane compounds of the type:

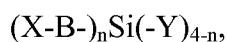


where $n = 1$ (paragraphs 0019, 0042-0053, 0055, 0082, 0085-0086), $X = NR_1R_2$, both R_1, R_2 being hydrogen (paragraphs 0019, 0042-0053, 0055, 0082, 0085-0086), and Y is chosen from hydrolysable groups such as alkoxy, carboxyl, and halogen (paragraphs 0019, 0042-0053, 0055, 0082, 0085-0086); and that

ii) the sol, subsequent to possible storage, is mixed with an epoxy resin so that the latter is cured (paragraphs 0027, 0055, 0082, 0085-0086).

6. Claims 1, 5, 7, and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hughes (US Pat. No. 5,786,032).

Regarding claims 1, 5, 7, and 15-19, Hughes discloses: (I) a hardener for curing of epoxy resins (column 2, lines 17-36) which produces materials with high abrasion resistance, photostability and chemical resistance (Abstract), characterized in that the hardener comprises a sol prepared by controlled hydrolysis and condensation of compounds of the type:



Art Unit: 1796

where $n = 1$ (column 3, lines 12-24; column 3, line 48 through column 4, line 59), $X = NR_1R_2$, both R_1 , R_2 being hydrogen (column 3, lines 12-24; column 3, line 48 through column 4, line 59), and Y is chosen from hydrolysable groups such as alkoxy, carboxyl, and halogen (column 3, lines 12-24; column 3, line 48 through column 4, line 59);

(5) characterized in that the hardener also comprises at least one dye and/or pigment (Abstract);

(7) characterized in that the hardener also comprises at least one additive (Abstract; column 3, lines 32-37);

(15) characterized in that more or less free amino groups at the surface of the particle-forming condensation product in the sol has been entirely or partly converted with reactive compounds such as epoxides, acid derivatives, blocked and non-blocked isocyanates and compounds of the type $R-X$ where X is a suitable atom or atom group that may be replaced and R is an organic residue or a fraction of such residue (*scope open to any reactive compound – see “such as”*); (16) characterized in that X is chosen among halogen, substituted or non-substituted alkoxy, phenoxy, amine, carboxylate, sulphonate, sulphinate, phosphonate and phosphinate (*not required: scope open to any/full list of reactive compounds in claim 15*); (17) characterized in that R is chosen among non-substituted saturated and unsaturated C_1-C_{24} alkyl, substituted saturated or unsaturated C_1-C_{24} alkyl, substituted or non-substituted aryl, aliphatic or aromatic carbonyl, wherein the carbon chains of said compounds may optionally include one or more of the elements nitrogen, sulphur, silicon and boron and groups chosen among condensation products of one or more type of chemical compounds such as acids, alcohols, phenols, amines,

Art Unit: 1796

aldehydes and epoxides (*not required: scope open to any/full list of reactive compounds in claim 15*);

(18) a cured epoxy material (column 2, lines 17-36; column 3, line 48 through column 4, line 59), characterized in that it is manufactured from an epoxy resin (column 2, line 66 through column 3, line 11; column 3, line 48 through column 4, line 59) and a hardener as defined by claim 1 (column 3, lines 12-24; column 3, line 48 through column 4, line 59);

(19) a method for curing epoxy resins, characterized in:

i) producing a stable sol by controlled hydrolysis and condensation of silane compounds of the type:



where $n = 1$ (column 3, lines 12-24; column 3, line 48 through column 4, line 59), $X = NR_1R_2$, both R_1 , R_2 being hydrogen (column 3, lines 12-24; column 3, line 48 through column 4, line 59), and Y is chosen from hydrolysable groups such as alkoxy, carboxyl, and halogen (column 3, lines 12-24; column 3, line 48 through column 4, line 59); and that

ii) the sol, subsequent to possible storage, is mixed with an epoxy resin so that the latter is cured (column 2, lines 17-36; column 2, line 66 through column 3, line 11; column 3, line 48 through column 4, line 59).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 1796

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes (US Pat. No. 5,786,032) in view of Kron et al. (US 2002/0018900).

Regarding claims 2-4, and 6, the teachings and analogous relationship of Hughes and Kron et al. are set forth above and incorporated herein. Hughes discloses the use of some *additives*; however, he fails to explicitly disclose: **(2)** wherein the hardener also comprises at least one UV-absorber; **(3)** at least one free radical scavenger; **(4)** at least one antioxidant; and **(6)** at least one filler.

The teachings of Kron et al. demonstrate that these additives are recognized in the art as suitable additives for this type of composition (*yielding a scratch-resistant coating*). In light of this, it has been found that the selection of known material based on its suitability for its intended use supports a *prima facie* obviousness determination – *see MPEP 2144.07*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the instantly claimed additives in the composition of Hughes because the teachings of Kron et al. demonstrate that these additives are recognized in the art as suitable additives for this type of composition (*yielding a scratch-resistant coating*).

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes (US Pat. No. 5,786,032) or Kron et al. (US 2002/0018900).

Regarding claim 20, the teachings of Hughes and Kron et al. are as set forth above and incorporated herein. Both references fail to explicitly disclose: **(20)** wherein unwanted reaction products from step i), such as alcohols and water, are removed from the sol prior to step ii).

Art Unit: 1796

However, this step merely represents a purification of the “hardener”. In light of this, it has been found that the purification of an old product is *prima facie* obvious. Furthermore, the skilled artisan would have readily recognized that the removal of these materials, especially water, would have provided some shelf-stability to this *hydrolysis/condensation* product.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to remove unwanted reaction products from the “hardener” in Hughes and Kron et al. because this removal merely represents a purification of the “hardener”. Furthermore, the skilled artisan would have readily recognized that the removal of these materials, especially water, would have provided some shelf-stability to this *hydrolysis/condensation* product.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 1796

Claims 1-7 and 15-17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-17 of copending Application No. 11/578,078 (US 2007/0290176). Although the conflicting claims are not identical, they are not patentably distinct from each other because: the copending claims disclose the instantly claimed "hardener" as component "d". Furthermore, the use of the instantly claimed additives in concert with this "hardener"/"d" would have been obviously envisaged in light of the specification (*see paragraph 0063 of the pre-publication*) – *See: In re Vogel*, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970); MPEP 804, II, B, 1.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claims 1-4, 7, and 15-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1-24, 26, and 27 of copending Application No. 11/578,470 (US 2007/0260030). Although the conflicting claims are not identical, they are not patentably distinct from each other because: the copending claims disclose the instantly claimed "hardener" (*also method of making and method of using*) as a "particulate, polybranched organic/inorganic hybrid polymer". Furthermore, copending claim 27 (*use of said material for crosslinking thermoset plastics*) obviously embraces epoxy resins, which is a commonly recognized thermosetting material.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Art Unit: 1796

12. Claims 1-4, 7, and 15-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 1, 2, and 4 of copending Application No. 11/578,471 (US 2008/0039607). Although the conflicting claims are not identical, they are not patentably distinct from each other because: the copending claims disclose the instantly claimed "hardener" (*also method of making and method of using*) as a "particulate, polybranched organic/inorganic hybrid polymer". Furthermore, copending claim 4 (*use of said material for crosslinking thermoset plastics*) obviously embraces epoxy resins, which is a commonly recognized thermosetting material.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Art Unit: 1796

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is (571)272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Feely/
Primary Examiner, Art Unit 1796

September 29, 2008